

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Please **delete** claims 1-86.

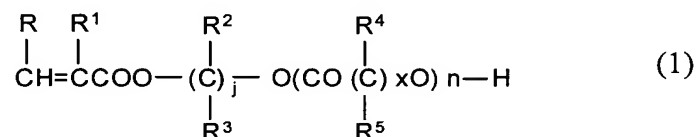
Please **add** the following claims:

87. (new) A hydroxyalkyl(meth)acrylate composition comprising:

0.3 to less than 1.0 mole of polymerized lactone monomer being polymerized by ring-opening with respect to 1 mole of hydroxyalkyl(meth)acrylate, wherein the content of the lactone monomer in the composition is 0-10% by weight, and

a proportion of monomers having two or more continuous chains ( $n \geq 2$ ) of lactones less than 37.4% (area by GPC),

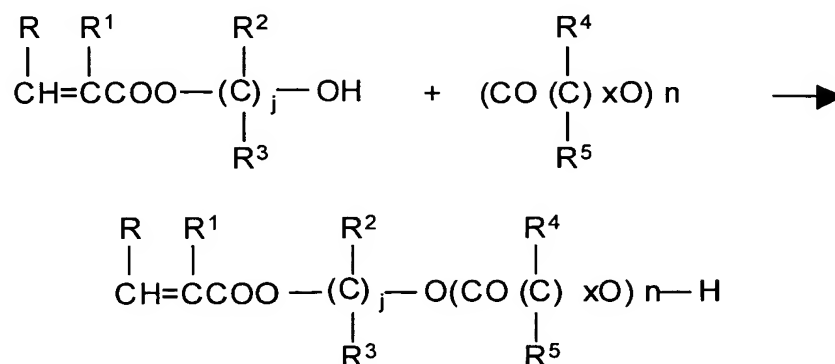
the composition being represented by formula (1) described below,



where R, R<sup>1</sup>, R<sup>2</sup>, and R<sup>3</sup> are independently a hydrogen or a methyl group, “j” is an integer of 2-6, xn pieces of R<sup>4</sup> and R<sup>5</sup> are independently a hydrogen or an alkyl group having a carbon number of 1-12, “x” is 4-7, “n” is an integer greater than or equal to zero, and an average value of “n” in the composition is not less than 0.3 to less than 1.0.

88. (new) A method for the preparation of a hydroxylalkyl(meth)acrylate composition comprising a small amount of lactones, said method comprising:

reacting, per mole of hydroxyalkyl(meth)acrylate, 0.3 to less than 1.0 mol of a lactone by ring-opening polymerization according to the reaction represented below:



(where R, R1, R2, and R3 are independently a hydrogen or a methyl group, “j” is an integer of 2-6, xn pieces of R4 and R5 are independently a hydrogen or an alkyl group having a carbon number of 1-12, “x” is 4-7, “n” is an integer equal to 0 or greater, and an average value of “n” in a composition is not less than 0.3 to less than 1.0), so as to prepare a polylactone-modified hydroxyalkyl(meth)acrylate composition wherein a proportion of monomers having not less than 2 continuous chains ( $n \geq 2$ ) of lactones is less than 37.4% (GPC area %) in the composition and the content of the lactone monomer remaining in the composition is 0-10% by weight.

89. (new) A hydroxyalkyl(meth)acrylate composition comprising a small amount of lactones as claimed in claim 87, wherein a hydroxyalkyl(meth)acrylate which is employed as a raw material is a hydroxyethyl(meth)acrylate.

90. (new) A hydroxyalkyl(meth)acrylate composition comprising a small amount of lactones as claimed in claim 87, wherein a lactone monomer which is employed as a raw material is  $\epsilon$ -caprolactone and/or valerolactone.
91. (new) A hydroxyalkyl(meth)acrylate composition comprising a small amount of lactones as claimed in claim 87, wherein the content of a lactone monomer remaining in the composition is 0-10% by weight.
92. (new) A hydroxyalkyl(meth)acrylate composition comprising a small amount of lactones as claimed in claim 87, wherein the content of a hydroxyalkyl(meth)acrylate remaining in the composition is not less than 20% by weight and not more than 50% by weight.
93. (new) A hydroxylalkyl(meth)acrylate composition comprising a small amount of lactones as claimed in claim 87, wherein the contents of a di(meth)acrylate which is a by-product in said composition is not more than 2% by weight.
94. (new) A hydroxyalkyl(meth)acrylate composition comprising a small amount of lactones as claimed in claim 87, wherein the by-products produced by Michael addition, acrylic polymerization, transesterification, and other side reactions is not more than 10% by weight in said composition.

95. (new) A method for the preparation of a hydroxyalkyl(meth)acrylate composition comprising a small amount of lactones as claimed in claim 88, wherein said hydroxyalkyl(meth)acrylate is hydroxymethylacrylate or hydroxyethylmethacrylate.
96. (new) A melamine-curable, water-based coating composition comprising:
- 5-30 parts by weight of an acrylic polyol resin (A) obtained using the hydroxyalkyl(meth)acrylate composition as claimed in claim 87, wherein a proportion of monomers having not less than 2 continuous chains ( $n \geq 2$ ) of lactones is less than 50% (GPC area %) as polymerizing components, and
- 10-60 parts by weight of an amino-plasto resin (IV-B).
97. (new) A melamine-curable, water-based coating composition as claimed in claim 96, further comprising:
- (i) 3-40% by weight of the hydroxyalkyl(meth)acrylate composition,
- (ii) 1-20% by weight of  $\alpha,\beta$ -unsaturated carboxylic acid,
- (iii) 1-25% by weight of an N-alkoxymethyl(meth)acrylate having a carbon number of 1-6 in an alkyl group, and
- (iv) an aromatic vinyl monomer and an alkyl(meth)acrylate which are contained in an amount that is equal to 100% by weight minus total weight % of the above components (i), (ii), and (iii).
98. (new) A curable resin composition comprising:

50-90 parts by weight of an acrylic polyol resin (V-A) obtained using the hydroxyalkyl(meth)acrylate composition as claimed in claim 87, in which a proportion of monomers having not less than 2 continuous chains ( $n \geq 2$ ) of lactones is less than 50% (GPC area %), and

50-10 parts by weight of a polyisocyanate compound (V-B),

wherein the total of the (V-A) and (V-B) does not exceed 100 parts by weight.

99. (new) A curable resin composition as claimed in claim 98, wherein said acrylic polyol resin (V-A) is composed of 5-65% by weight of the hydroxyalkyl(meth)acrylate composition (a), 0-30% by weight of a vinyl monomer having a hydroxyl group, and other vinyl-based monomers (residual weight).
100. (new) A curable resin composition comprising 0.5 – 80 parts by weight of an acrylic polyol resin (VI-A) having a carboxylic group and a functional group obtained by reacting the hydroxyalkyl(meth)acrylate composition as claimed in claim 87, with a vinyl monomer having carboxylic group and other vinyl monomers, and
- 0.5 – 50 parts by weight of a polyisocyanate compound (VI-B),
- wherein a proportion of monomers having not less than 2 continuous chains ( $n \geq 2$ ) of lactones is less than 50% (GPC area %), and the total of the (VI-A) and (VI-B) does not exceed 100 parts by weight.

101. (new) A curable resin composition as claimed in claim 100, wherein said acrylic polyol resin (VI-A) is a vinyl-based copolymer having a carboxylic group and a functional group, said copolymer being obtained by reacting a reaction product of a hydroxyl group-containing resin and a (meth)acrylic anhydride with a vinyl-based monomer having carboxylic group and other vinyl based monomers, said hydroxyl group-containing resin being obtained by polymerizing the hydroxyalkyl(meth)acrylate composition.
102. (new) A curable resin composition as claimed in claim 101, wherein said acrylic polyol resin (VI-A) comprises said hydroxyl group-containing resin and at least one resin selected from a group consisting of a urethane resin having hydroxyl groups, an epoxy resin having hydroxyl groups, a cellulose derivative having hydroxyl groups, and a polyester resin having hydroxyl groups.
103. (new) A curable resin composition as claimed in claim 100 wherein said acrylic polyol resin (VI-A) is a resin comprising said hydroxyl group-containing resin obtained by polymerizing the hydroxyalkyl(meth)acrylate composition and a urethane resin having hydroxyl groups.
104. (new) A curable resin composition as claimed in claim 100 wherein said polyisocyanate compound (VI-B) is a polyisocyanate compound containing an epoxy resin.
105. (new) A coating comprising:

(i) crosslinked particles obtained by dispersing a mixture of an acrylic polyol resin (VI-A) with a polyisocyanate compound (VI-B) into a water-based medium and by crosslinking thereof, or

(ii) composite crosslinked particles composed of a urethane-urea/ethylene-based resin obtained through polymerizing polymerizable ethylenic unsaturated compounds containing a hydroxyalkyl(meth)acrylate composition comprising a small amount of lactones in water in which crosslinked urethane-urea particles are dispersed, as resin components for forming a thin layer.

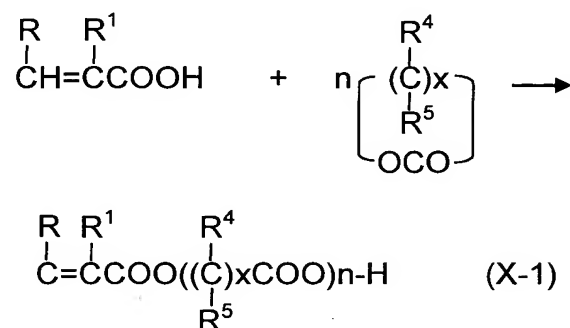
106. (new) A coating as claimed in claim 105, further comprising not less than 50% by weight of crosslinked particles having a particle diameter of not more than 1  $\mu\text{m}$  and, moreover, an average molecular weight between crosslinking points within a range of 300-2,000, as resin components for forming a thin layer.

107. (new) A polyester unsaturated monomer composition comprising a small amount of lactones, in which a proportion of monomers having not less than 2 continuous chains ( $n \geq 2$ ) of lactones is less than 50% (GPC area %), said composition obtained by a ring-opening polymerization of less than 1 mole of a lactone monomer with respect to 1 mole of polymerizable unsaturated monomer containing a carboxylic group.

108. (new) A polyester unsaturated monomer composition comprising a small amount of lactones as claimed in claim 107, wherein said polymerizable unsaturated monomer containing carboxylic group is at least one kind selected from the group consisting of a

(meth)acrylic acid, itaconic acid,  $\beta$ -(meth)acryloyloxyethyl succinic acid,  $\beta$ -(meth)acryloyloxyethyl maleic acid,  $\beta$ -(meth)acryloyloxyethyl phthalic acid, maleic acid, a monoalkyl maleate (a carbon number in an alkyl group is 1-12), tetrahydrophthalic acid, and an anhydride thereof.

109. (new) A polyester unsaturated monomer composition as claimed in claim 108, wherein said polymerizable unsaturated monomer containing carboxylic group is a (meth)acrylic acid, and which is obtained by a reaction represented by (X-1) described below,



(in the formula, R and R<sup>1</sup> are independently a hydrogen or a methyl group, xn pieces of R<sup>4</sup> and R<sup>5</sup> are independently a hydrogen or an alkyl group having a carbon number of 1-12, "x" is 4-7, "n" and "n" in said composition are an integer greater than or equal to zero, and an average value of "n" in said composition is not less than 0.3 to less than 1.0).